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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,445	07/18/2003	Timothy W. Kueper	10001.002000 (NVLS 817)	3555
31894	7590	05/05/2006	EXAMINER	
OKAMOTO & BENEDICTO, LLP P.O. BOX 641330 SAN JOSE, CA 95164			THOMAS, LUCY M	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/623,445	KUEPER, TIMOTHY W.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lucy Thomas	2836	

**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 8, 10-13, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Schubert et al. (US 6,426,860). Regarding Claim 1, Schubert discloses in a wafer processing system, an electrostatic chuck 11 comprising: a body 13 having a top surface configured to face a wafer; an electrode 20 buried in the body; and a reflective coating 14,15 over the top surface (see Figure 1, Column 6, lines 33-46, Column 7, lines 14-23).

Regarding Claim 2, Schubert discloses the electrostatic chuck, wherein the top surface includes raised contact points 17 configured to contact the wafer and the reflective coating does not go over the raised contact points (Column 6, lines 55-60).

Regarding Claim 3, Schubert discloses the electrostatic chuck, wherein the reflective coating does not go over portions of the electrostatic chuck that make contact with the wafer (Column 6, lines 38-46, 55-60).

Regarding Claim 4, Schubert discloses the electrostatic chuck, wherein the body is made of a leaky dielectric material (Column 6, lines 47-54).

Regarding Claim 8, Schubert discloses the electrostatic chuck, wherein the reflective coating comprises a metal layer 14 over the top surface and a protection layer 15 over the metal layer (Column 6, lines 47-54).

Regarding Claims 10-13, the recited steps of the method claims would necessarily be performed when using the electrostatic chuck in a wafer processing system as disclosed in Claims 1-3, 4, and 8. Therefore, please see the rejection for Claim 1-3, 4, and 8 recited above. The reflective coating comprising a metal layer and a glass ceramics layer disclosed by Schubert would necessarily reflect heat from the back side of the wafer off and back onto the backside of the wafer as recited in Claim 10.

Claims 16-18 basically recite the elements of Claims 1-3, 4, and 8, except that an apparatus for supporting a wafer is recited instead of the electrostatic chuck, and further limiting the body comprising dielectric material. Schubert discloses the body comprising dielectric material (Column 6, lines 47-54). Also, Claim 18 recites a protective film over instead of a protective layer over metal layer recited in Claim 8. Therefore, please see the rejection for Claim 1-3, 4, and 8 recited above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9, 5-7, 14-15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (US 6,426,860) in view of Murakawa et al. (US 6,916,559).

Regarding Claim 9, Schubert discloses the electrostatic chuck, wherein the metal layer comprises chromium or nickel and the protection layer comprises a glass ceramics "ZERODUR" (Column 6, lines 38-54). Schubert does not disclose the metal layer comprises aluminum and the protection layer comprises aluminum nitride. Murakawa discloses in a wafer processing system (see Figure 6), an electrostatic chuck 70 comprising: a body 71 having a top surface configured to face a wafer; an electrode 73 buried in the body; and a protection layer comprises aluminum nitride (Column 1, lines 57-63, Column 2, lines 1-15). It would have been obvious to those skilled in the art at the time the invention was made to provide a metal layer comprising aluminum to meet the requirements of the system and to provide aluminum nitride as the protection layer as taught by Murakawa to obtain the refractive index requirements of the system. Aluminum nitride and "ZERODUR" are commonly used ceramics or dielectric materials used as a protection layer over the metal layer, and to vary the refractive index. Aluminum nitride provides thermal stability and specific stiffness. Aluminum is a commonly used metal (group III element) for applications such as metal contacts, doping and as a mirror or reflective metal in wafer processing industry, which is readily available, anticorrosive, and inexpensive.

Regarding Claim 5, Murakawa discloses the electrostatic chuck, wherein the body is a leaky dielectric material comprising alumina (Column 2, lines 1-15). It would

have been obvious those skilled in the art at the time the invention was made to use alumina as taught Murakawa as alumina is hard, wear resistant, has high strength and stiffness, excellent dielectric properties from DC to GHz frequencies, and has good thermal capacity.

Regarding Claim 6, Murakawa discloses the electrostatic chuck, wherein the reflective coating reflects radiation in an infrared (IR) region (Murakawa's coating comprises alumina which is known to radiate in IR region and visible region).

Regarding Claim 7, Murakawa discloses the electrostatic chuck, wherein the reflective coating comprises aluminum nitride, which is formed of aluminum (Column 2, lines 1-15).

Regarding Claims 14-15, the recited steps of the method claims would necessarily be performed when using the electrostatic chuck in a wafer processing system as disclosed in Claims 9. Therefore, please see the rejection for Claim 9 recited above.

Claim 20 basically recites the elements of Claims 13, except that an apparatus for supporting a wafer is recited instead of the electrostatic chuck. Therefore, please see the re rejection for Claim 13. The remaining part of Claim 20 recites the method aluminum is deposited on the apparatus as sputtering. Sputtering one of the methods used in wafer processing industry for deposition of metals, and has advantages over other methods as the deposited film has the same composition as the source material and has higher deposition rate and thus yield lower impurities and higher quality.


Regarding Claim 19, Schubert discloses the apparatus, wherein the reflective coating comprises sections of discontinuous sections, but does not specify the sections corresponding to bipolar electrode regions buried in the body. It would have been obvious to those skilled in the art at the time the invention was made to provide discontinuous sections corresponding to the electrode regions to increase the electrostatic chucking.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**PHUONG T. VU**  
**PRIMARY EXAMINER**